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| EXAMINER |
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SCHWARTZ, DARREN B

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| ART UNIT | PAPER NUMBER |
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2435

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10/26/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/521,848 | VAN DER VEEN ET AL. | |
| | Examiner | Art Unit | |
| | DARREN SCHWARTZ | 2435 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 August 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 8-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 8-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 1-6 and 8-10 are re-presented for examination.

In view of the Appeal Brief filed on 09 August 2010, PROSECUTION IS HEREBY REOPENED. New grounds of rejection are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

Response to Arguments

1. Applicant's arguments, see the Appeal Brief, filed 09 August 2010, with respect to the claim rejections under 35 U.S.C. 112, first paragraph, written description have been fully considered and are persuasive. The claim rejection under 35 U.S.C. 112, first paragraph, written description has been withdrawn.

2. Regarding the claim rejections under 35 U.S.C. 112, first paragraph, enablement, Applicant argues on page 9 of the Appeal Brief, "The Examiner asserts that a skilled

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person would not be able to practice the claimed invention without undue experimentation, alleging that the mathematical distance measure M is undefined."

The Examiner sustains this position and further clarifies the position *infra*.

Applicant further argues, "As discussed above, a skilled person in the art would understand to calculate the mathematical distance measure $M(H_x, H_{1...N})$ and to compare it with a predefined limiting distance. Appellants respectfully submit that no experimentation is required to make and use the claimed invention, because a skilled person can define and use an applicable mathematical distance measure function $M(H_x, H_{1...N})$."

The Examiner has taken into consideration that the test of enablement is not whether any experimentation is necessary, but whether, if experimentation is necessary, it is undue, *In re Angstadt*, 537 F.2d 498, 504 (CCPA 1976).

The Examiner disagrees with Applicant's arguments and finds Applicant's arguments counter-intuitive; It is unclear how a mathematical distance measure can be implemented if it is not practiced. Secondly, the statements of Applicant are mere arguments without any underlying evidence nor support. The arguments of counsel cannot take the place of evidence in the record. See *In re De Blauwe*, 736 F.2d 699, 705 (Fed. Cir. 1984), *In re Payne*, 606 F.2d 303, 315 (CCPA 1979), *In re Greenfield*, 571 F.2d 1185, 1189 (CCPA 1978), *In re Pearson*, 494 F.2d 1399, 1405 (CCPA 1974). The Examiner sets forth *infra* a new ground of rejection supported with evidence under 35 U.S.C. 112, first paragraph, enablement.

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3. The Examiner respectfully withdraws the claim rejections under 35 U.S.C. 112, second paragraph, without prejudice.

4. Applicant argues on page 10 of Remarks Shuster does not teach nor suggest, "if multiple second fingerprints are matched that have a mathematical distance measure less than a predefined limiting distance from the first fingerprint."

The Examiner concurs and respectfully withdraws the claim rejections in view of Shuster. Therefore, the prior ground of rejection has been withdrawn. However, upon further consideration, a new ground of rejection is set forth *infra*.

5. Applicant argues on pages 12-13 of Remarks, the combination of Levy and Lofgren do not teach nor suggest, "if multiple second fingerprints are matched that have a mathematical distance measure less than a predefined limiting distance from the first fingerprint."

The Examiner conquers and respectfully withdraws the claim rejections made in view of the combination of Levy and Lofgren. Therefore, the prior ground of rejection has been withdrawn. However, upon further consideration, a new ground of rejection is set forth *infra*.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

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art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 1-6 and 8-10 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claims contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make or use the invention.

Regarding independent claims 1, 4 and 8, each claim recites “if multiple second fingerprints are matched that have a mathematical distance measure less than a predefined limiting distance from the first fingerprint,” with particular emphasis on the mathematical distance measure.

There are many factors to be considered when determining whether there is sufficient evidence to support a determination that a disclosure does not satisfy the enablement requirement and whether any necessary experimentation is “undue;” the Examiner addresses these factors (*In re Wands*, 858 F.2d 731, 737 (Fed. Cir.1988))

In establishing the meets of the invention, the Examiner finds support for such “mathematical distance measure” on page 5, lines 18-30 and page 6, line 12-18, wherein the “mathematical distance measure” is defined as M wherein it is taught whether $M(H_x, H_{1...N}) > D_1$ or $M(H_x, H_{1...N}) < D_1$. The Applicant agrees with this support as demonstrated on pages 4-5 of the Appeal Brief.

Applicant’s argument that “no experimentation is required to make and use the claimed invention, because a skilled person can define and use an applicable mathematical distance measure function $M(H_x, H_{1...N})$ ” (page 9 of the Appeal Brief)

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explicitly establishes that a person of ordinary skill would have to find such a mathematical distance measure function M ; this argument further contributes to the lack of enablement as a person of ordinary skill is given no direction as to what qualifies as a mathematical distance measure function M . Even if one of ordinary skill were to find such a mathematical distance measure function M , the Examiner believes that the quantity of experimentation in determining a mathematical distance measure function M would be “undue.”

Based on the disclosure of the invention and Applicant's statements, Applicant's have placed entire burden on a person of ordinary skill in the art rather than teaching themselves within the enablement provision requirement of the first paragraph of 35 U.S.C. 112 affirmatively how to make and use the presently claimed subject matter, specifically, the mathematical distance measure function. There is a clear and explicit lack of direction provided by the inventor as to what Applicant regards as a mathematical distance measure function.

The “mathematical distance measure,” hereinafter referred to M , as disclosed by Applicant, is left ambiguous; the function has no substance other than its inputs H_x & $H_{1...N}$ and a potential output that may or may not be less than or greater than a value D . Such “mathematical distance measure” is left undefined and unbounded; the claimed “mathematical distance measure” covers all past and present measures and those yet to be conceived. Thus, disclosure of the invention is commensurate with the scope of protection sought by the claims.

The Examiner notes, the specification is silent as to working examples.

The Examiner introduces the following evidence: “Distance: From Wikipedia, the free encyclopedia,” as indexed by www.archive.org, October 12, 2007, hereinafter referred to as The Archive. In certain circumstances, references cited to show a universal fact need not be available as prior art before applicant’s filing date. *In re Wilson*, 311 F.2d 266, 135 USPQ 442 (CCPA 1962). References which do not qualify as prior art because they postdate the claimed invention may be relied upon to show the level of ordinary skill in the art at or around the time the invention was made. *Ex parte Erlich*, 22 USPQ 1463 (Bd. Pat. App. & Inter. 1992).

The Archive establishes that a mathematical distance measure, distance measuring function or distance, covers several mathematical paradigms: geometry, Euclidean spaces, metric spaces and sets. The geometry paradigm covers the well known Pythagorean’s theorem over n-space, a well known mathematical distance measure. The Euclidean space paradigm covers several norm distances over n-space, another well known mathematical distance measure. The metric paradigm covers distance functions defined as d , another mathematical distance measure, wherein “This definition satisfies the three conditions above, and corresponds to the standard topology of the real line. But distance on a given set is a definitional choice;” the definitional choice is clearly left open to those who wish to choose a different metric; thus the paradigm is open to various mathematical distance measures. The set paradigm covers two classes which are defined via metric spaces, discussed *supra* and is thus unbounded in what may be considered a mathematical distance function d over the

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metric space. The Archive further describes other distances, a.k.a. Hamming distance “used in coding theory,” another well known distance measure function over computer datums.

Since none of these paradigms are inconsistent nor inapposite to Applicant’s claimed mathematical distance measure they are thus qualified as mathematical distance measures. The Examiner has shown a mathematical distance measure encompasses several mathematical distance measure’s over several mathematical paradigms. There is an abundant quantity of mathematical distance measuring functions known to one of ordinary skill that may be applicable and representative of Applicant’s mathematical distance measure function M. Thus, the quantity of experimentation needed to make or use the invention which comprises the mathematical distance measure function M is quite undue.

Dependant claims 2, 3, 5, 6, 9 and 10 encompass alternative embodiments of the independent claims without further clarifying nor obviating the issues addressed *supra*. Thus the dependant claims inherit the deficiencies of the claims upon which they depend.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. Claims 1-3 and 8-10 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Independent claims 1 and 8 are directed to calculating a first digital fingerprint, comparing the first fingerprint, matching fingerprints using a mathematical function, calculating a digital watermark and matching the watermark. The step of calculating a first digital fingerprint is the manipulation of data based on other data; the steps of comparing is the mere examination or determining if two data's are equal; the mathematical distance measure is a mathematical manipulation of data; calculating a digital watermark is the manipulation of data based on other data; establishing an identity of a digital sequence or the determination that the first fingerprint is unique are mere abstract conclusions determined by the manipulation and use of data. Thus, the steps merely involve the mere manipulation and calculation of data wherein the fingerprints and watermarks are, themselves, data. Such steps do not necessarily require a machine nor is there transformation of an article. The steps can be performed as a mental process. Thus, the claim may be construed as an abstract idea and is thus nonstatutory under 35 U.S.C. 101 (*Bilski v. Kappos*, 130 S.Ct. 3218 (2010)).

Dependent claims 2, 3, 9 and 10 when analyzed as a whole are held to be patent ineligible under 35 U.S.C. 101 because the additional recited limitations fail to establish that the claims are not directed to an abstract idea. Dependent claims 2, 3, 5, 6, 9 and 10 describe additional calculations and manipulation of data and thus themselves are abstract ideas are thus nonstatutory under 35 U.S.C. 101 (*Bilski v. Kappos*, 130 S.Ct. 3218 (2010)).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-6 and 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wells et al (U.S. Pat App Pub 2003/0086341 A1), hereinafter referred to as Wells, in view of Lofgren, hereinafter referred to as Lofgren et al (U.S. Pat App Pub 2002/0154144 A1), hereinafter referred to as Lofgren, in further view of Levy et al (U.S. Pat App Pub 2003/0021441 A1).

Re claims 1 and 8: Wells teaches a method for identifying a first digital data sequence and a method for enabling identification of a first digital data sequence, comprising:

calculating a first digital fingerprint based on at least part of the first sequence (Figure 1B; ¶89; ¶100),

comparing the first fingerprint with a plurality of second fingerprints respectively associated with a plurality of second digital data sequences (¶67; ¶96),

if multiple second fingerprints are matched that have a mathematical distance measure less than a predefined limiting distance from the first fingerprint (Figure 7A, elts 702→703—Yes→705; ¶199-¶208); otherwise the first fingerprint is established as unique (Figure 7B, elts 717→718→719—Yes→720; ¶200).

However, Wells does not expressly disclose, calculating a digital watermark associated with the first data sequence and comparing the calculated digital watermark with second digital data sequences in order to establish an identity of the first digital data sequence.

Yet, Lofgren teaches calculating a digital watermark associated with the first data sequence (§37, lines 6-8; §45, lines 1-2; §46, lines 2-3; §47) and comparing the calculated digital watermark with second digital data sequences in order to establish an identity of the first digital data sequence (§38; §46, lines 2-3; §47; §49, lines 3-8; §51-§52; §65; §73).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the teachings of Wells with the teachings of Lofgren, for the purpose of providing uniquely identifying proprietary content whilst maintaining the integrity and quality of the original media. Further, watermarks are appreciated by those of ordinary skill in tracking potentially pirated content from the original breach and thus holds accountability in pirated content.

However, the combination of Wells and Lofgren does not expressly disclose watermarks respectively associated with the matched multiple second fingerprints.

Levy teaches watermarks (§58) respectively associated with the matched multiple second fingerprints (§51; §54).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the teachings of Wells and Lofgren with the teachings of Levy, for the purpose of simultaneously providing protecting the integrity of

proprietary content and unique identification of proprietary content to protect them from pirating; Levy recognizes utilizing both fingerprinting, watermarking and applying such techniques to protect proprietary content.

Lofgren, for the purpose of indexing, searching & retrieving information expediently.

Re claim 4: Wells teaches a system for identifying a first digital data sequence, comprising: a processor for (Fig 16, elt 1602)

calculating a first digital fingerprint based on at least part of the first sequence (Figure 1B; ¶89; ¶100),

comparing the first fingerprint with a plurality of second fingerprints respectively associated with a plurality of second digital data sequences (¶67; ¶96),

if multiple second fingerprints are matched that have a mathematical distance measure less than a predefined limiting distance from the first fingerprint (Figure 7A, elts 702→703—Yes→705; ¶199-¶208); otherwise the first fingerprint is established as unique (Figure 7B, elts 717→718→719—Yes→720; ¶200).

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identity of the first digital data sequence (§38; §46, lines 2-3; §47; §49, lines 3-8; §51-§52; §65; §73).

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the teachings of Wells and Lofgren with the teachings of Levy, for the purpose of simultaneously providing protecting the integrity of proprietary content and unique identification of proprietary content to protect them from pirating; Levy recognizes utilizing both fingerprinting, watermarking and applying such techniques to protect proprietary content.

Lofgren, for the purpose of indexing, searching & retrieving information expediently.

Re claims 2, 5 and 9: The combination of Wells, Levy and Lofgren teaches calculating the digital watermark associated with the first data sequence, is dependent

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on information contained in the first fingerprint (Levy: ¶54: lines 15-21 & lines 33-36; ¶57-¶58; Lofgren: ¶47; ¶49).

Re claims 3, 6 and 10: The combination of Wells, Levy and Lofgren teaches calculating the digital watermark associated with the first data sequence is dependent on information resulting from the comparison between the first fingerprint and the plurality of second fingerprint (Levy: ¶51; ¶54: lines 15-21 & lines 33-36; ¶57-¶58; Lofgren: ¶47; ¶49; ¶52).

Conclusion

Examiner's Note: Examiner has cited particular columns and line numbers in the references applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the text of the passage taught by the prior art or disclosed by the examiner.

In the case of amending the claimed invention, Applicant is respectfully requested to indicate the portion(s) of the specification which dictate(s) the structure relied on for proper interpretation and also to verify and ascertain the metes and bounds of the claimed invention.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to DARREN SCHWARTZ whose telephone number is (571)270-3850. The examiner can normally be reached on 7am-5pm EST, Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Vu can be reached on (571)272-3859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. S./

Examiner, Art Unit 2435

/P. P./

Primary Examiner, Art Unit 2435

/Kimyen Vu/

Supervisory Patent Examiner, Art Unit 2435